

## NOTES

**CHROMOSOME COUNTS IN *ASTRAGALUS* (FABACEAE).**—Chromosome counts are reported below for 15 taxa of *Astragalus*. Eleven of these are believed to be previously undocumented. Counts for three of the four previously reported taxa are in agreement with earlier studies (James, L. E., Observations on the taxonomy of *Astragalus*, subgenus *Hesperastragalus*, Contr. Dudley Herb. 4:57–72, 1951; Spellenberg, R., Chromosome numbers and their cytotaxonomic significance for North American *Astragalus* (Fabaceae), Taxon 25:463–476, 1976). A count of “ca.  $n=12$ ” has been reported for *A. breweri* (Raven, P. H., D. W. Khyos, and A. J. Hill, Chromosome numbers of spermatophytes, mostly Californian, Aliso 6:105–113, 1965). This gametic number is in conflict with the gametic and somatic numbers of  $n=11$  and  $2n=22$  obtained in the present study for four populations of this species, including one (*Liston 669-1*) from the same location.

The chromosome numbers reported below support the general homogeneity of section *Inflati*, where most species have  $n=11$  (Spellenberg, loc. cit.). Likewise, the chromosomal heterogeneity of section *Leptocarpi* is further documented, and the first count of  $n=13$  in this section is reported for *A. nyensis*.

The methodology of Soltis (Karyotypic relationships among species of *Boykinia*, *Huechera*, *Mitella*, *Sullivantia*, *Tiarella* and *Tolmiea* [Saxifragaceae], Syst. Bot. 5:17–29, 1980) was used for obtaining mitotic counts from root tips with a cold water (2–4°C) pretreatment of 8–24 hours substituted for 8-hydroxyquinoline. Buds were fixed in 3:1 ethanol:acetic acid (v:v) and meiotic counts were made using standard acetocarmine squash techniques. All counts were documented with drawings made with the aid of a camera lucida and/or photomicrographs. Voucher specimens and documenting drawings are at RSA. Collection numbers are mine unless noted otherwise. Nomenclature and sectional placement follow Barneby (Atlas of North American *Astragalus*, Mem. New York Bot. Gard., 1964). An asterisk denotes a taxon for which the count is believed to be the first reported.

### Sect. *Inflati*

- \**Astragalus gruinus* Barneby,  $2n=22$ , Mexico, Baja California, Sierra San Pedro Mártir, Upper Vallecitos, 711-1.
- \**A. prorifer* M. E. Jones,  $2n=22$ , Mexico, Baja California, Sierra San Pedro Mártir, 1.6 km E of entrance to Parque Nacional, 772-3.

### Sect. *Leptocarpi*

- \**A. acutirostris* S. Watson,  $2n=24$ , CA, Kern Co., 9.6 km N of Hwy 58 on California City Rd, 718-1; San Bernardino Co., Granite Mts., Cottonwood Basin, *Thorne 51550*.
- A. breweri* A. Gray,  $n=11$ , CA, Lake Co., 4.5 km NE of Middletown, 708-1;  $2n=22$ , 5 km NE of Lakeport, 669-1; 13 km S of Hwy 29 on Butts Canyon Rd, 707-1;  $n=11$ , Marin Co., Mt. Tamalpais State Park, Rock Springs, 693-1.
- \**A. clarianus* Jepson,  $2n=22$ , CA, Napa Co., Bothe-Napa Valley State Park, 660-1; NE side of Lake Hennessey, Conn Valley Rd, 706-1.
- \**A. mohavensis* S. Watson,  $2n=24$ , NV, Clark Co., Spring Mts., mouth of Lee Canyon, *Morefield 4475*.
- A. nothoxys* A. Gray,  $2n=28$ , AZ, Graham Co., Pinaleno Mts., Hwy 366, 7.3 km SW of Hwy 666, 737-1;  $n=14$ , Santa Cruz Co., 8 km SSE of Elgin, 739-1.
- A. nuttallianus* A. DC. var. *imperfectus* (Rydb.) Barneby,  $2n=22$ , NV, Clark Co., N side of Virgin River, 0.5 km SW of Riverside bridge, 729-2.

- \**A. nyensis* Barneby,  $2n=26$ , NV, Clark Co., N side of Virgin River, 0.5 km SW of Riverside bridge, 729-1.
- \**A. pauperculus* E. Greene,  $2n=24$ , CA, Butte Co., 15 km SE of Chico, 694-1; Tehama Co., 5 km SW of Dales, 698-1.
- \**A. rattani* A. Gray var. *rattani*,  $2n=22$ , CA, Mendocino Co., Middle Fork Eel River, 1.4 km SE of Dos Rios, 703-1.
- \**A. rattani* var. *jepsonianus* Barneby,  $2n=22$ , CA, Colusa Co., 10.6 km S of Bartlett Springs Jct. on Bear Valley-Lodoga Rd., 667-3;  $n=11$ , Glenn Co., 5.3 km N of Stonyford on Elk Creek Rd, 699-1;  $2n=22$ , Lake Co., 0.7 km N of Hwy 20 on Walker Ridge Rd, 707-1.
- \**A. tener* A. Gray var. *tener*,  $n=11$ , CA, Merced Co., San Luis Island, 22.4 km N of Los Banos on Hwy 165, 690-1;  $2n=22$ , Solano Co., "Jepson's Prairie", S of Lake Olcutt, 691-1.
- A. tener* var. *titi* (Eastw.) Barneby,  $2n=22$ , CA, Monterey Co., Monterey Peninsula, 17 Mile Drive, Bird Rock, *Yadon s.n.*

#### Sect. *Microlobium*

- A. gambelianus* E. Sheldon,  $2n=22$ , CA, Lake Co., 4.5 km NE of Middletown, 708-2.

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## NOTEWORTHY COLLECTIONS

### ARIZONA

*ASCLEPIAS CUTLERI* Woodson (ASCLEPIADACEAE).—Apache Co., Nokaito Bench 14.5 km E of Mexican Water Chapter House along S side of old road to Teec Nos Pos and 9.8 km E of US 191, 36°59'30"N, 109°30'30"W, 1580 m, 15 Jun 1982, *A. M. Phillips, III* (AMP) 82-152 and *N. J. Brian* (MNA); 6.0 km by dirt road SW of Rock Point bridge, dune area E of road, behind small outcrop, locally common, 36°41'N, 109°40'W, 1670 m, 15 Jun 1982, AMP 82-163 and *Brian* (MNA); 1.6 km W of Rock Point bridge, in sand dunes crossing road, 36°43'N, 109°39'W, ca. 1600 m, 15 Jun 1982, AMP 82-164B and *Brian* (MNA).

*Previous knowledge.* Originally discovered in 1937 at Nokaito Bench (*Peebles 13581 and Smith*, ARIZ). The Rock Point population, approximately 50 km to the SW, was found in 1938 (*Cutler 2177*; MO, Type). Also known from 3 collections from Grand and San Juan cos., UT (BRY).

*Significance.* Our 1982 collections are apparently the first records of the species in AZ since the original and only known collections were made in 1937–1938. The Rock Point sites were searched in 1981 without finding plants; apparently they remained dormant after the dry winter of 1980–1981, whereas the moist winter of 1981–1982